REMARKS

Claims 1 – 32, 36, and 37 are pending in the present application. Claims 1, 16, 20 – 32, 36, and 37 have been amended, and Claims 38 – 54 have been added, leaving Claims 1 – 32, and 36 – 54 for consideration upon entering the present amendment. Support for new Claims 38 – 54 can at least be found in the claims as originally filed as well as in Table 1 and the specification, page 5, line 25 – page 6, line 5. Claims 1 and 16 have been amended to clarity the purity of the zirconia. Support for this amendment can be found on page 5, line 25 – page 6, line 5. Claims 20 – 32, 36, and 37 have merely been amended to correct an error in the preamble. No new matter has been added.

Applicants would like to than the Examiner for the telephone discussion on July 15, 2003 regarding the parent application. During the discussing, the examples set forth in Table 1 were discussed.

Claim Rejections Under 35 U.S.C.§ 103(a)

Claims 1, 4, 6-16, 18, 20-22, 25-32, 36, and 37 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over U.S. Patent No. 6,258,233 to Sugiyama et al. in view of U.S. Patent No. 4,221,650 to Friese et al. with evidence provided by Practical Handbook of Material Science. Claims 2, 3, and 24 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Sugiyama et al. in view of Friese et al., and further in view of U.S. Patent No. 5,968,673 to Aizawa et al. Claim 17 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Sugiyama et al. in view of Friese et al., and further in view of U.S. Patent No. 5,849,165 to Kojima et al. Applicants respectfully traverse this rejection and maintain their position set forth in the Response to the Final Rejection.

Additionally, Applicants contend that, alone and in combination, these references at least fail to teach: mixing zirconia, yttria, and alumina with at least one solvent to form a mixture, wherein the zirconia has about 100 ppm silica or less (Claims 1 and 16); mixing yttria stabilized zirconia, with monoclinic phase zirconia, yttria, and alumina with at least one solvent to form a mixture (Claim 38 and 51); or, mixing yttria stabilized zirconia, yttria, and alumina with at least one solvent to form a mixture (Claim 42). Sugiyama et al., Practical Handbook of Material Science, Aizawa et al., Friese et al., and Kojima et al., also fail to teach the elements claimed in

the dependent claims such as the zirconia having about 1,000 ppm or lower total impurities (Claims 36, 37, 46, 47, and 48), and the like.

It is noted that none of the references teach the amount of impurities in the zirconia or that by having a purity level of about 1,000 or lower the total impurities and improvement in resistivity can be achieved. The present claims are directed to unique methods of manufacturing sensors and zirconia-alumina bodies. None of the references, alone and in combination teach all of the elements of the present claims. Reconsideration and withdrawal of all rejections is respectfully requested.

It has been asserted in the Advisor Action that "it appears the applicant is attempting to cast doubt on the examiner's combination of references without asserting (and/or providing any evidence) that the applicant believes these various properties would be affected in an unexpected manner." (Advisory Action, page 2, paragraph 3) Applicants were expressing that, when read as a whole, Sugiyama et al. actually motivate away from a combination that changes their zirconia solid electrolyte body.

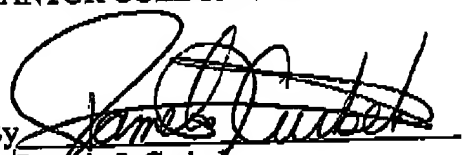
Friese teaches that, in their zirconium dioxide compositions, the use of alumina impedes grain growth. Therefore, their zirconium dioxide compositions have high mechanical strength and good resistance to thermal shock. (Col. 2, line 63 – Col. 3, line 6) In contrast to Friese, Sugiyama et al. focus on producing a gas tight and strong zirconia solid electrolyte body by focusing on the sintered grain sizes, monoclinic to cubic ratio, and the relative densities of the electrolyte and the adjacent alumina body. (Col. 3) They teach that the zirconia solid electrolyte body having a relative density of 94-100% with a mean sintered grain size of 0.5-3.0 micrometers, and the alumina substrate has relative density of 95-100% with a mean sintered grain size of 0.5-4.0 micrometers. (Abstract) They further discuss that *the desired gas tight, strong electrolyte is not obtained outside of these ranges*. (Col. 3., lines 5 – 13 and line 65 – Col. 4, line 4) In other words, Sugiyama et al. express various strict limits around their electrolyte body and motivate away from changing anything about the zirconia solid electrolyte body for fear that *the desired gas tight, strong electrolyte will not be obtained*. However, regardless of the lack of motivation to combine or modify any of the references and/or the teachings away from such combinations, these references, even when combined, fail to teach all of the elements of the present application.

It is believed that the foregoing remarks fully comply with the Final Rejection and the Advisory Action and that the claims herein are allowable to Applicants. Accordingly, reconsideration and withdrawal of the rejections and allowance of the case are respectfully requested.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130.

Respectfully submitted,

CANTOR COLBURN LLP

By 
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Date: July 24, 2003
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